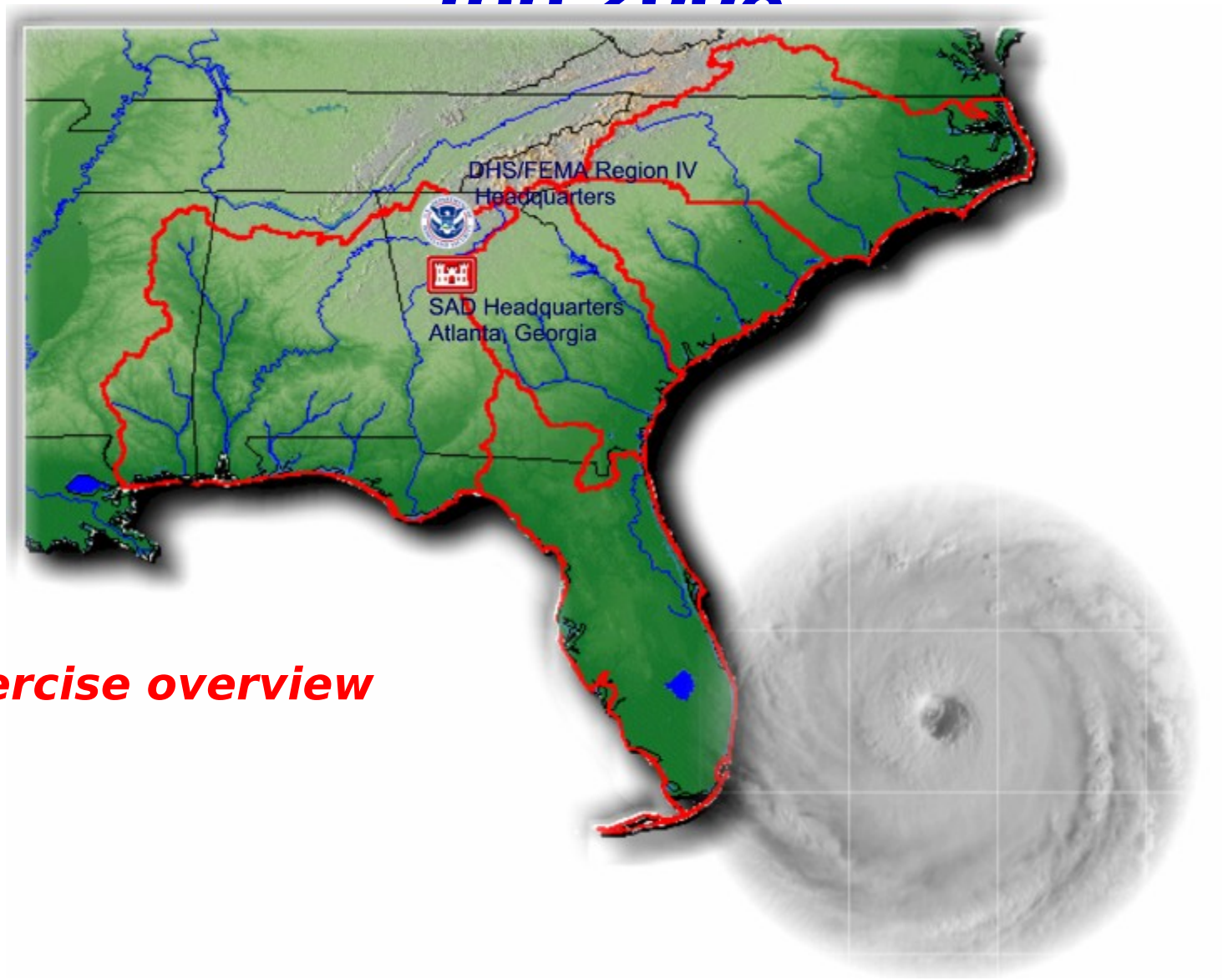
US Army Corps of Engineers
South Atlantic Division

SAD Regional Response Table Top 2008



Exercise overview

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South Atlantic Division

SAD Regional Response Table Top 2008

Threat:

Hurricane Forecast for 2008

ATLANTIC BASIN SEASONAL HURRICANE FORECAST FOR 2008

Forecast Parameter and 1950-2000 Climatology (in parentheses)	Issue Date 7 December 2007	Issue Date 9 April 2008
Named Storms (NS) (9.6)	13	15
Named Storm Days (NSD) (49.1)	60	80
Hurricanes (H) (5.9)	7	8
Hurricane Days (HD) (24.5)	30	40
Intense Hurricanes (IH) (2.3)	3	4
Intense Hurricane Days (IHD) (5.0)	6	9
Accumulated Cyclone Energy (ACE) (96.1)	115	150
Net Tropical Cyclone Activity (NTC) (100%)	125	160

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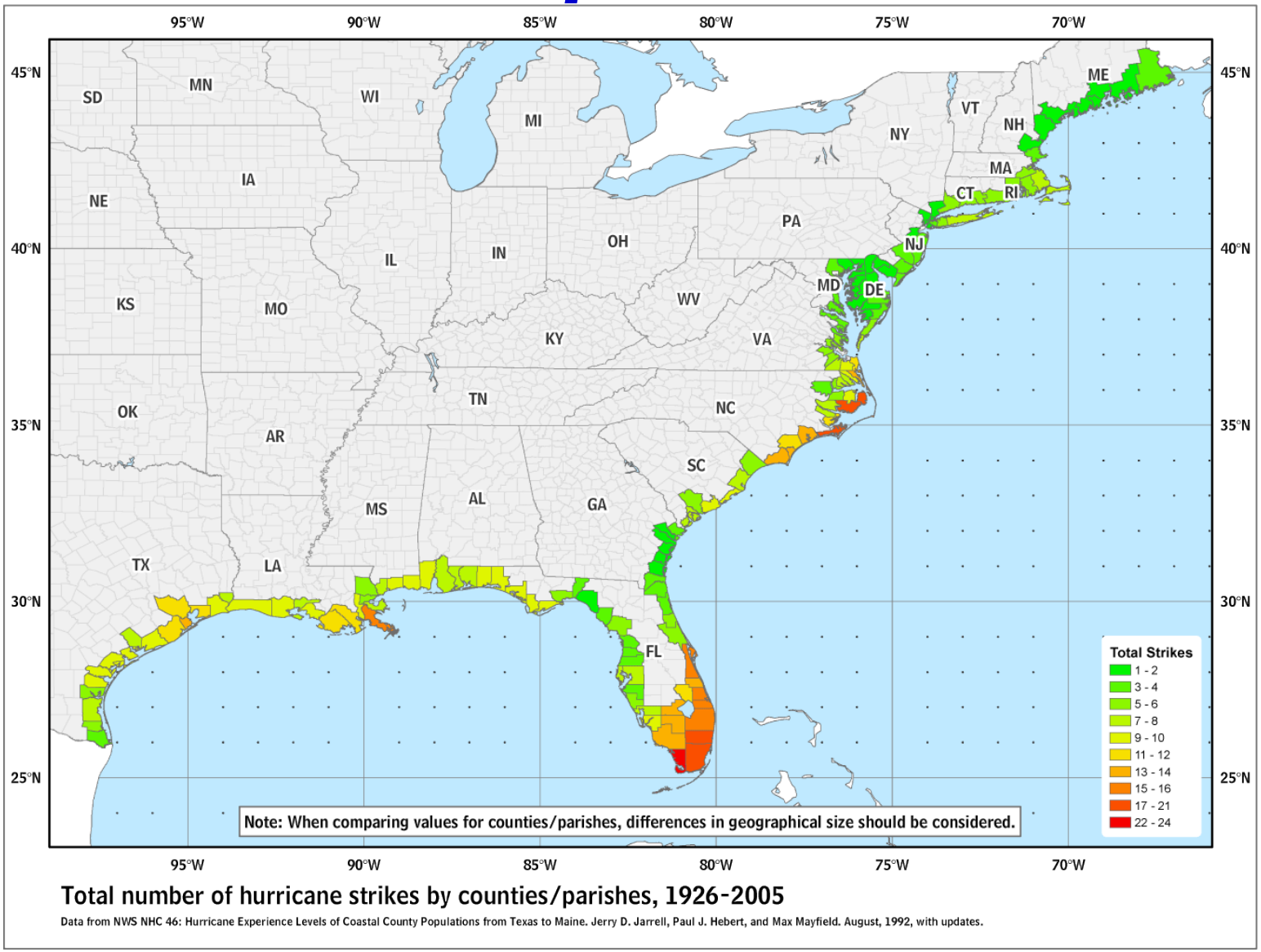
SAD Regional Response Table Top 2008

Vulnerabilities



Total number of hurricane strikes by counties/parishes, 1926-2005

Data from NWS NHC 46: Hurricane Experience Levels of Coastal County Populations from Texas to Maine. Jerry D. Jarrell, Paul J. Hebert, and Max Mayfield. August, 1992, with updates.

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SAD Regional Response Table Top 2008

Preparedness

- *Table-Top Exercises in 2007*
  - ✓ *SAD Regional Response Table Top 1 May 2007*
  - ✓ *FEMA IV RISC Meeting 2-3 May 2007*
  - ✓ *Region IV Logistics Table Top 9 May 2007*
  - ✓ *HQ TTEX 10 May 2007*
  - ✓ *All Hazards/Readiness XXI Workshop 16 May 2007*
  - ✓ *Water/Ice/Commodities Table Top 22 May 2007*
- **Preparedness Activities**
  - ✓ **GAP Analysis On-going with FEMA Region IV**
  - ✓ **Readiness XXI / EM CoP Conference 18-20 March 2008**
  - ✓ **USACE/FEMA SLS 7-8 April 2008**
  - ✓ **National Level Exercise 02-08 1-8 May 2008**
- **Training**
  - ✓ **Response Exercise (Ft. Gillem) 5-9 May 2008**
  - ✓ **Housing Training scheduled for 2008**
  - ✓ **National Ice/Water Training 2008**
- **Plans and Guidance**
  - ✓ **2008 OPLAN Draft**
  - ✓ **National Response Framework Available at: http://www.fema.gov/nrf**

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SAD Regional Response Table Top 2008

National Response Framework

Purpose

- Guides how the nation conducts all-hazards incident response

Key Concepts

- Builds on the National Incident Management System (NIMS) with its flexible, scalable, and adaptable coordinating structures
- Aligns key roles and responsibilities across jurisdictions
- Links all levels of government, private sector, and nongovernmental organizations in a unified approach to emergency management
- Always in effect: can be partially or fully implemented
- Coordinates Federal assistance without need for formal trigger

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SAD Regional Response Table Top 2008
What has Changed?

- A *Framework* … not a Plan
- Written for two audiences
  - Senior elected and appointed officials
  - Emergency Management practitioners
- Emphasizes roles of the local governments, States, NGOs, individuals and the private sector
- Establishes Response Doctrine
  - Engaged partnership
  - Tiered response
  - Scalable, flexible, and adaptable operational capabilities
  - Unity of effort through unified command
  - Readiness to act
- Establishes planning as a critical element of effective response

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SAD Regional Response Table Top 2008

Challenges

- PRT Transformation Continues
- RXXI Impacts
- USACE Logistics Activity (ULA)
- ACE-IT
- Funding
- National Response Framework
- Catastrophic Disaster Planning
- The “New” FEMA Logistics

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SAD Regional Response Table Top 2008

Goals and Objectives:

One of our main goals this year is to establish a better understanding of changes implemented by the National Response Framework (NRF) and the Post-Katrina Emergency Management Reform Act of 2006 as well as the continued relationship between USACE and our Federal partners. The key objectives are:

- Review and exercise our Division Execution Matrix to include Planning and Response Team (PRT) response and reporting requirements.

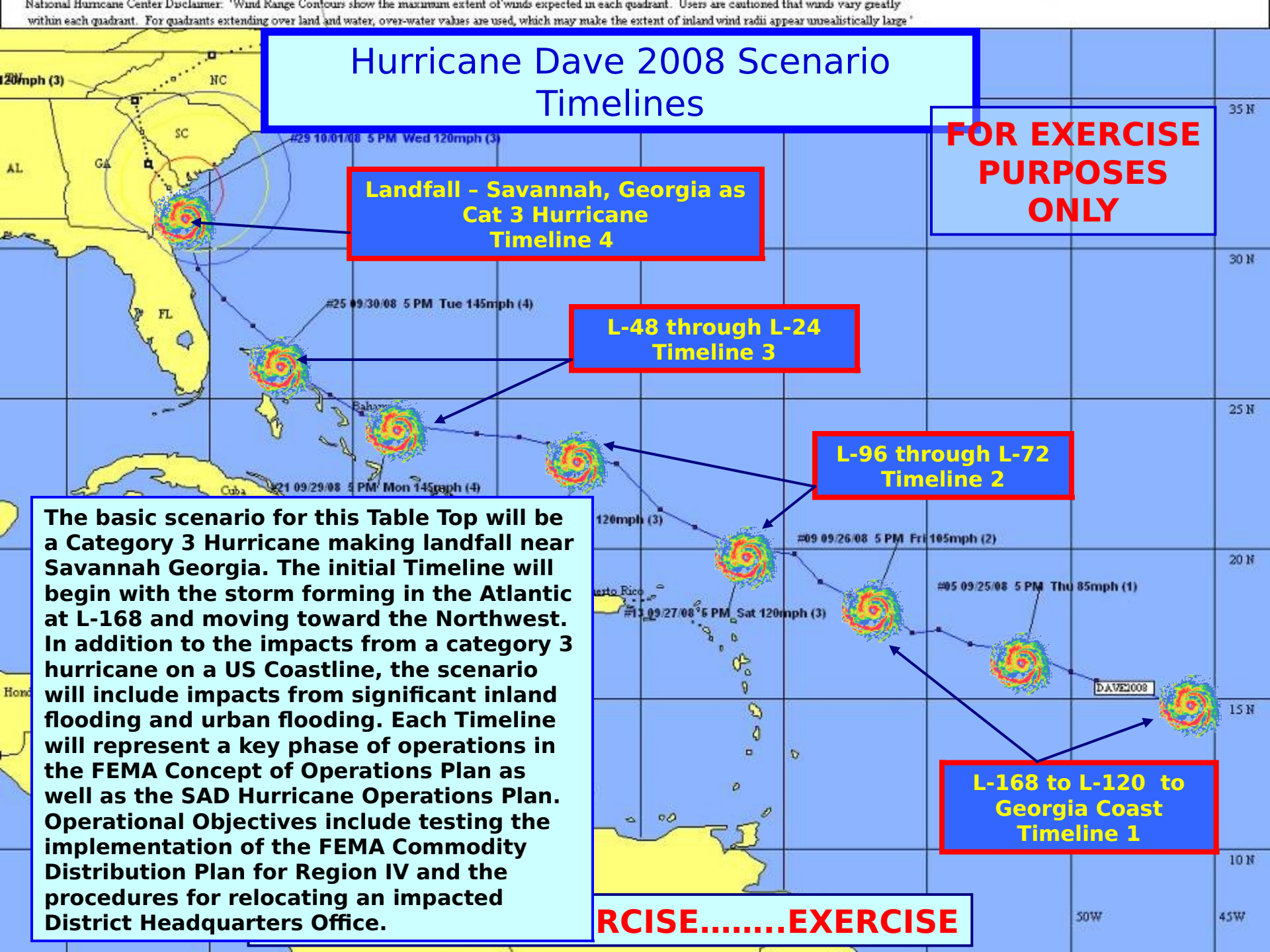
- Identify the key actions and decisions required for successful execution of the USACE ESF #3 Mission under the National Response Framework.

- Simulate exercising SAD OPLAN areas requiring synchronization with the FEMA Region IV and our other Federal Partners' plans.

- Review SAD OPLAN scaled response capabilities to identify gaps in resource requirements and devise ways to close the gaps.

- Identify District resource gaps and determine ways to minimize or eliminate these gaps prior to the start of hurricane season.

- Ensure that all participants understand the JFO command and control relationships established under the Unified Command concept and ensure the Commander-ESF#3 Team Leader relationship is clearly defined.

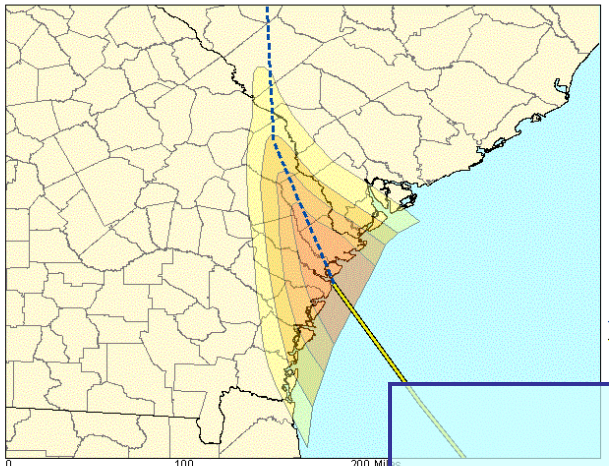

National Hurricane Center Disclaimer: "Wind Range Contours show the maximum extent of winds expected in each quadrant. Users are cautioned that winds vary greatly within each quadrant. For quadrants extending over land and water, over-water values are used, which may make the extent of inland wind radii appear unrealistically large."
Hurricane Dave 2008 Scenario Timelines
FOR EXERCISE PURPOSES ONLY
Landfall – Savannah, Georgia as Cat 3 Hurricane Timeline 4
L-48 through L-24 Timeline 3
L-96 through L-72 Timeline 2
L-168 to L-120 to Georgia Coast Timeline 1
#29 10/01/08 5 PM Wed 120mph (3)
#25 09/30/08 5 PM Tue 145mph (4)
#21 09/29/08 5 PM Mon 145mph (4)
#13 09/27/08 5 PM Sat 120mph (3)
#09 09/26/08 5 PM Fri 105mph (2)
#05 09/25/08 5 PM Thu 85mph (1)
DAVE2008
NC
SC
GA
AL
FL
Cuba
35 N
30 N
25 N
20 N
15 N
10 N
50W
45W
The basic scenario for this Table Top will be a Category 3 Hurricane making landfall near Savannah Georgia. The initial Timeline will begin with the storm forming in the Atlantic at L-168 and moving toward the Northwest. In addition to the impacts from a category 3 hurricane on a US Coastline, the scenario will include impacts from significant inland flooding and urban flooding. Each Timeline will represent a key phase of operations in the FEMA Concept of Operations Plan as well as the SAD Hurricane Operations Plan. Operational Objectives include testing the implementation of the FEMA Commodity Distribution Plan for Region IV and the procedures for relocating an impacted District Headquarters Office.
RCISE.....EXERCISE

Hurricane Dave 2008 Projected Damage Areas

US Army Corps of Engineers

Landfall Has Occurred

For Planning Purposes Only!



Source: US Army Corps of Engineers
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Post Landfall Projected Damage Areas

This model is based on a Category 3 storm making landfall near Savannah, GA.

Forecast Track
Historic Track

Projected Damage Areas

- CAT 0-type damage
- CAT 1-type damage
- CAT 2-type damage
- CAT 3-type damage
- CAT 4-type damage
- CAT 5-type damage

Information provided on this page displays a Category 3 storm making landfall near Savannah, GA. These projections are based on information from the NHC (1500 EDT 04/08/2008) forecast.

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

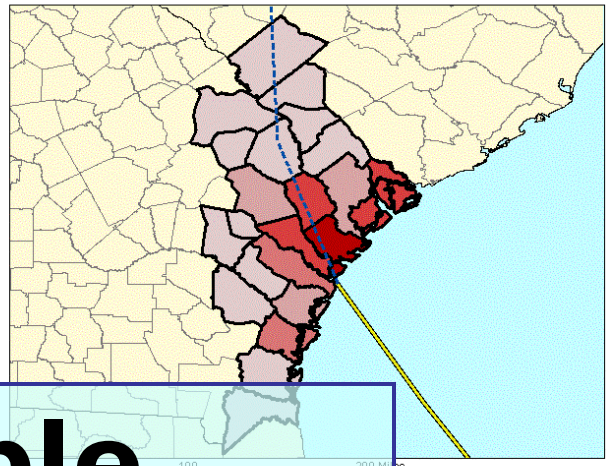
Hurricane Dave 2008 Projected Damage Areas	
Generated By: Siemsen, LRL 1530 EDT 04/08/2008	
Sources: HURREVAC LRL-DEBRIS	Page 1 of 29

Hurricane Dave 2008 Debris Model

US Army Corps of Engineers

Landfall Has Occurred

For Planning Purposes Only!



Source: US Army Corps of Engineers
All Rights Reserved

Post Landfall Debris Model Results

Georgia - 9,185,000 Yards
South Carolina - 983,000 Yards
Florida - 27,000 Yards

Model results per County on following page

This model is based on a Category 3 storm making landfall near Savannah, GA.

Forecast Track
Historic Track

Debris

- < 100,000 cubic yards
- 100,000 - 249,999 cubic yards
- 250,000 - 499,999 cubic yards
- 500,000 - 999,999 cubic yards
- >1,000,000 cubic yards

Information provided on this page displays a Category 3 storm making landfall near Savannah, GA. These projections are based on information from the NHC (1500 EDT 04/08/2008) forecast. The amount of debris forecasted is possible total volume, not necessarily the volume that may need to be removed with Federal funds, but does not include volume that may be covered by private insurance. Debris volume may include storm surge generated debris.

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

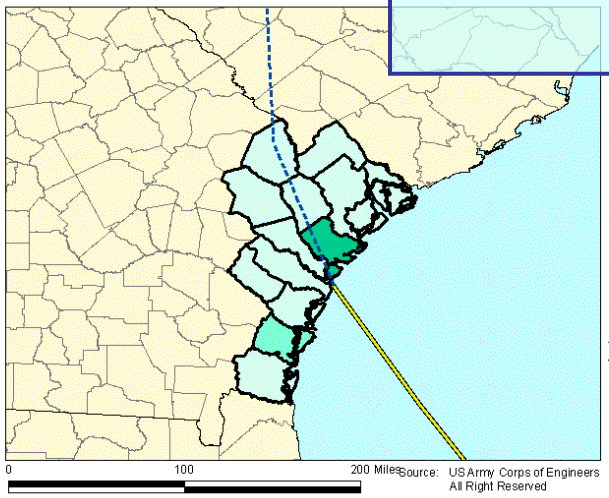
Hurricane Dave 2008 Debris Model	
Generated By: Siemsen, LRL 1530 EDT 04/08/2008	
Sources: HURREVAC LRL-DEBRIS	Page 2 of 29

Hurricane Dave 2008 Commodities Model

US Army Corps of Engineers

Landfall Has Occurred

For Planning Purposes Only!



Source: US Army Corps of Engineers
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Post Landfall Commodities Model Results

Day One / Day Two / Day Three
GA – 10/21/42 Truckloads
SC – 2/3/5 Truckloads

Model results per County on following page

This model is based on a Category 3 storm making landfall near Savannah, GA.

Forecast Track
Historic Track

Commodities

- < 5 Trucks Each
- 5 - 10 Trucks Each
- 11 - 20 Trucks Each
- 21 - 40 Trucks Each
- > 40 Trucks Each

Information provided on this page displays a Category 3 storm making landfall near Savannah, GA. These projections are based on information from the NHC ***(1500 EDT 04/08/2008)*** forecast. The amount of commodities forecasted is based on Mission Guide Book requirements and SME input. The graphic represents single day needs with full distribution system in place and operating.

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

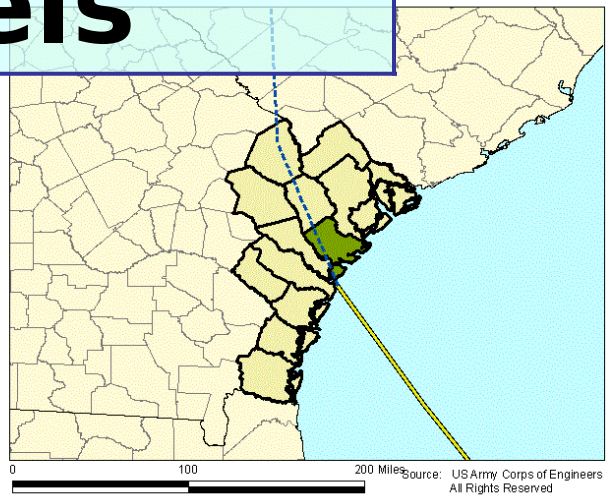
Hurricane Dave 2008 Commodities Model	
Generated By: Siemsen, LRL 1530 EDT 04/08/2008	
Sources: HURREVAC LRL-DEBRIS	Page 4 of 29

Hurricane Dave 2008 Temporary Roofing Model

US Army Corps of Engineers

Landfall Has Occurred

For Planning Purposes Only!



Source: US Army Corps of Engineers
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Post Landfall Temporary Roofing Model Results

Georgia - 10,600
South Carolina - 400

Model results per County on following page

This model is based on a Category 3 storm making landfall near Savannah, GA.

Forecast Track
Historic Track

Temporary Roofing

- < 2,000 units
- 2,000 - 3,999 units
- 4,000 - 5,999 units
- 6,000 - 9,999 units
- > 10,000 units

Information provided on this page displays a Category 3 storm making landfall near Savannah, GA. These projections are based on information from the NHC (1500 EDT 04/08/2008) forecast. Temporary roofing is based on 2% in CAT 1, 5% in CAT 2 and 8% in CAT 3.

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Dave 2008 Roofing Model	
Generated By: Siemsen, LRL 1530 EDT 04/08/2008	
Sources: HURREVAC LRL-DEBRIS	Page 6 of 29

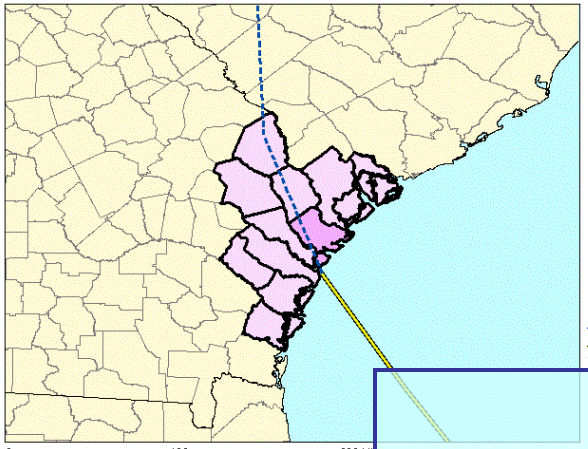
Sample Mission Models

Hurricane Dave 2008 Temporary Housing Model

US Army Corps of Engineers

Landfall Has Occurred

For Planning Purposes Only!



Source: US Army Corps of Engineers
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Post Landfall Temporary Housing Model Results

Georgia - 3,300

Model results per County on following page

This model is based on a Category 3 storm making landfall near Savannah, GA.

Forecast Track
Historic Track

Temporary Housing

- < 2,000 units
- 2,000 - 3,999 units
- 4,000 - [illegible] units
- 6,000 - [illegible] units
- > 10,000 units

Information provided on this page displays a Category 3 storm making landfall near Savannah, GA. These projections are based on information from the NHC (1500 EDT 04/08/2008) forecast. Temporary housing is based on 1% in CAT 2 and 3% in CAT 3.

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Dave 2008 Housing Model

Generated By: Siemsen, LRL 1530 EDT 04/08/2008

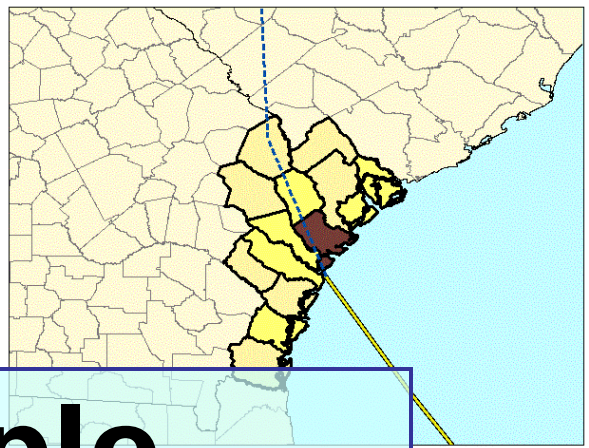
Sources: HURREVAC, LRL-DEBRIS

Hurricane Dave 2008 Population Model

US Army Corps of Engineers

Landfall Has Occurred

For Planning Purposes Only!



Source: US Army Corps of Engineers
All Rights Reserved

Post Landfall Population Model Results

Georgia - 462,000
South Carolina - 44,000

Model results per County on following page

This model is based on a Category 3 storm making landfall near Savannah, GA.

Forecast Track
Historic Track

Population

- < 25,000 persons
- 25,000 - 99,999 persons
- 100,000 - 174,999 persons
- 175,000 - 249,999 persons
- > 250,000 persons

Information provided on this page displays a Category 3 storm making landfall near Savannah, GA. These projections are based on information from the NHC (1500 EDT 04/08/2008) forecast. The numbers of persons included in this model output are those that would be included within estimated hurricane force winds (Census 2000 values adjusted to July 2006 values).

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Dave 2008 Population Model

Generated By: Siemsen, LRL 1530 EDT 04/08/2008

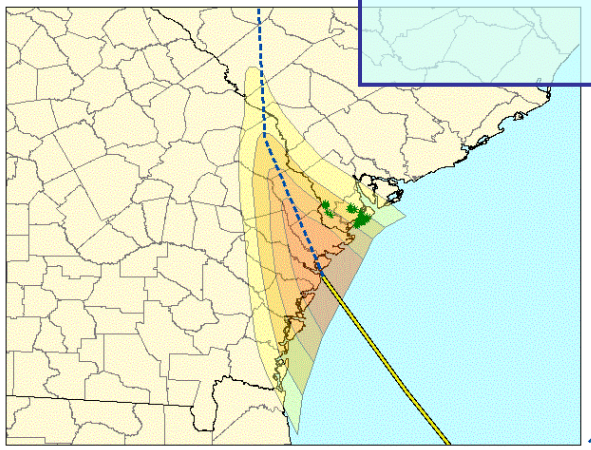
Sources: HURREVAC, LRL-DEBRIS

Hurricane Dave 2008 Potable Water

US Army Corps of Engineers

Landfall Has Occurred

For Planning Purposes Only!



Source: US Army Corps of Engineers
All Rights Reserved

Model Results Show Potable Water Inside Hurricane Force Winds

South Carolina - 41

Model results per County on following page

This model is based on a Category 3 storm making landfall near Savannah, GA.

Potable Water
Forecast Track
Historic Track

Information provided on this page displays a Category 3 storm making landfall near Savannah, GA. These projections are based on information from the NHC (1500 EDT 04/08/2008) forecast.
The number of potable water included in this output are those that would be included within estimated hurricane force winds (data source: Homeland Security Infrastructure Program).

Details about this model may be obtained at http://www.englink.usace.army.mil or contact Louisville District staff at DLL-CELRL-GIS@usace.army.mil

Hurricane Dave 2008 Potable Water

Generated By: Siemsen, LRL 1530 EDT 04/08/2008

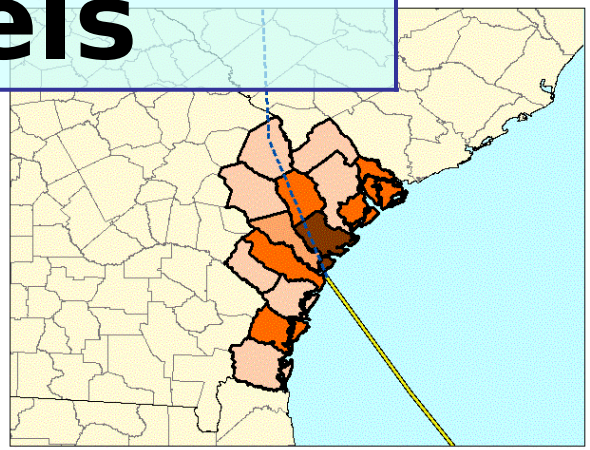
Sources: HURREVAC, LRL-DEBRIS

Hurricane Dave 2008 Households Model

US Army Corps of Engineers

Landfall Has Occurred

For Planning Purposes Only!



Source: US Army Corps of Engineers
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Post Landfall Households Model Results

Georgia - 177,000
South Carolina - 19,000

Model results per County on following page

This model is based on a Category 3 storm making landfall near Savannah, GA.

Forecast Track
Historic Track

Households

- < 7,500 households
- 7,500 - 14,999 households
- 15,000 - 24,999 households
- 25,000 - 49,999 households
- > 50000 households

Information provided on this page displays a Category 3 storm making landfall near Savannah, GA. These projections are based on information from the NHC (1500 EDT 04/08/2008) forecast. The numbers of households included in this model output are those that would be included within estimated hurricane force winds (Census 2000 values adjusted to July 2006 values).

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Hurricane Dave 2008 Households Model

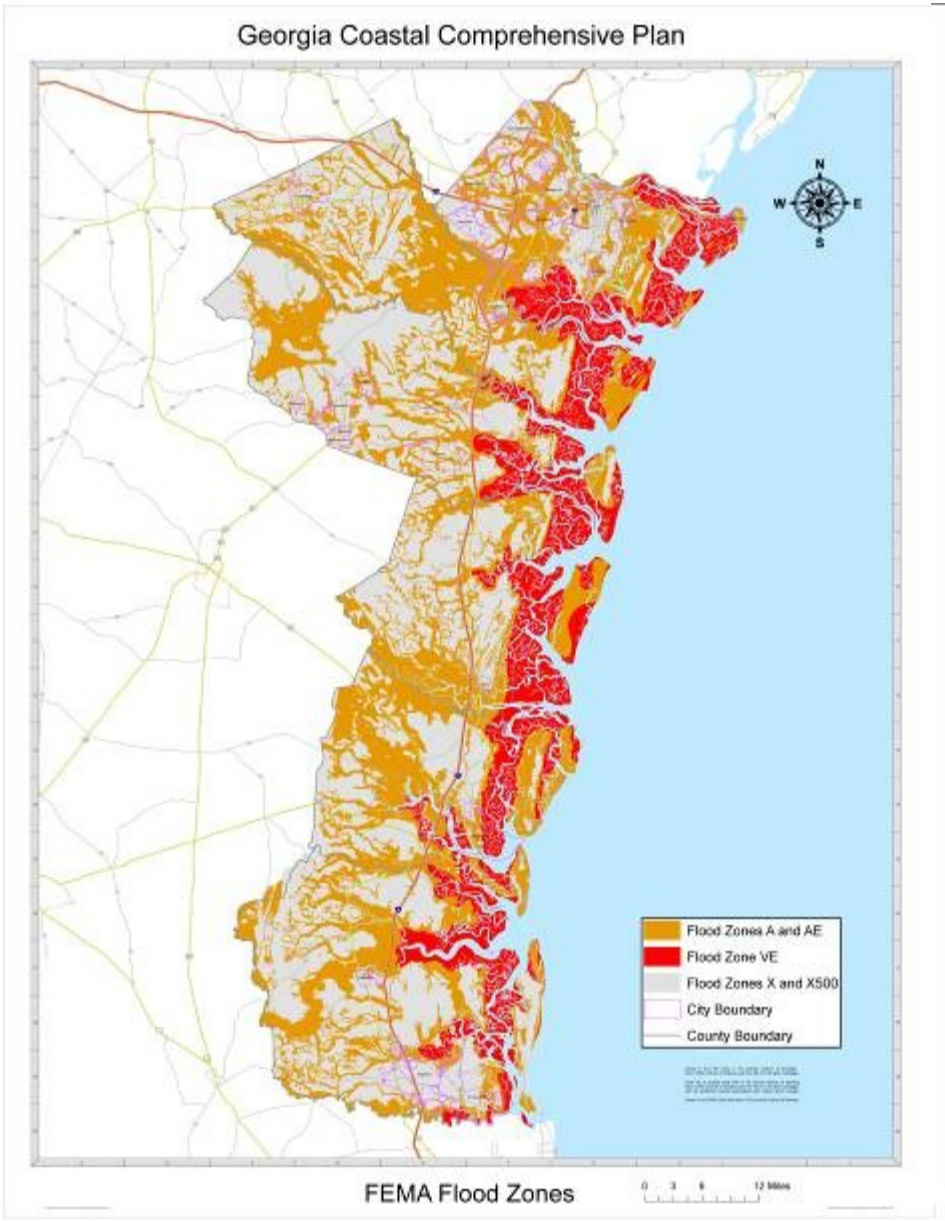
Generated By: Siemsen, LRL 1530 EDT 04/08/2008

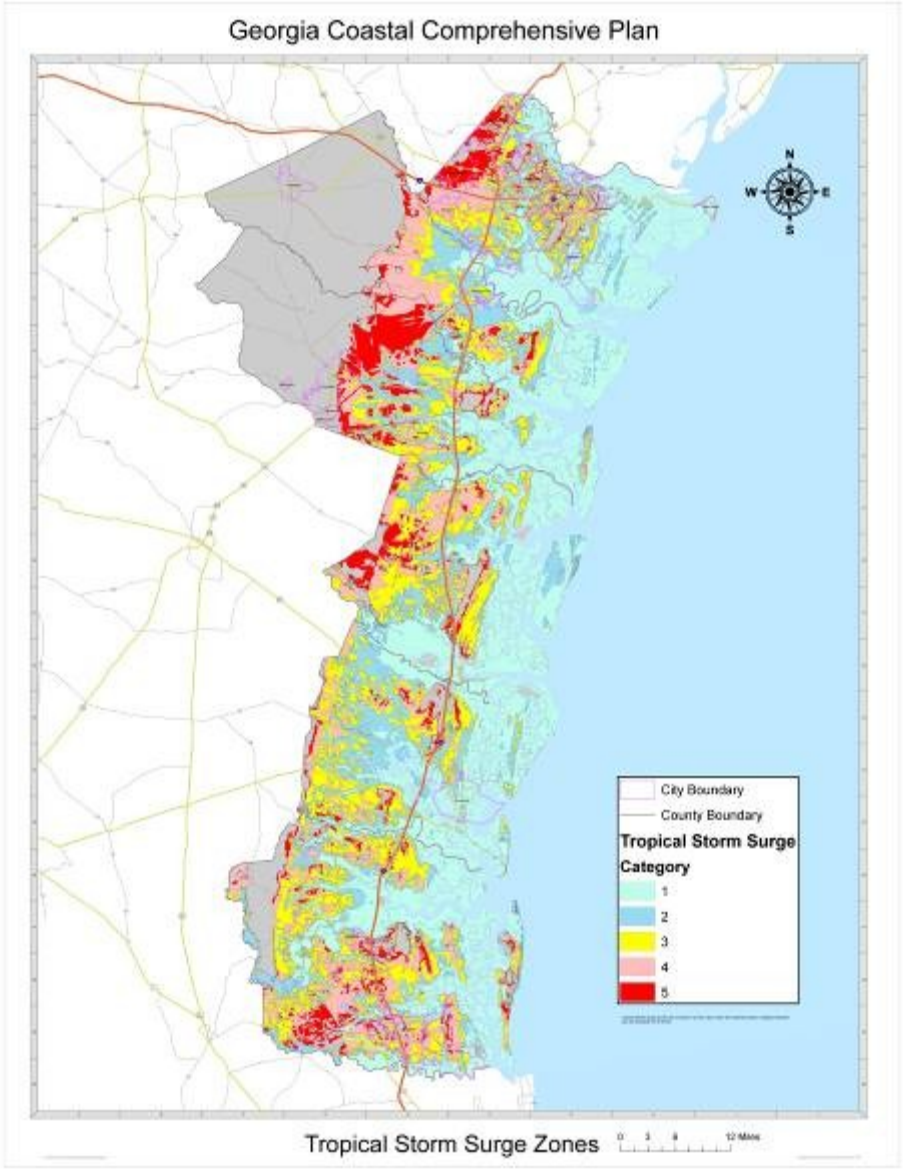
Sources: HURREVAC, LRL-DEBRIS

Sample Mission Models

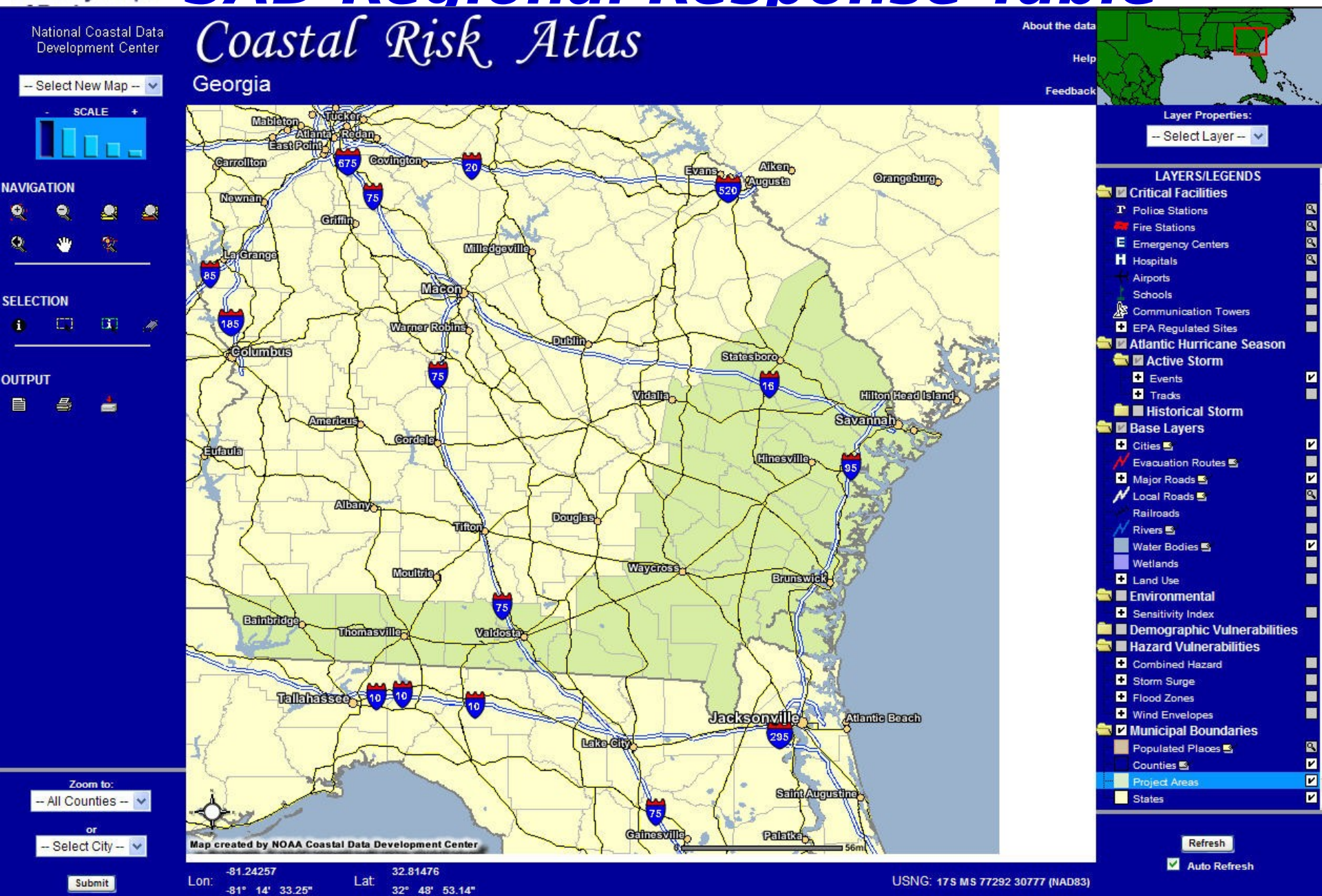
US Army Corps of Engineers
South Atlantic Division

SAD Regional Response Table 2008





SAD Regional Response Table



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SAD Regional Response Table